

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
CRAAMER, Johannes Antonius

Serial No. 10/571,995

Confirmation No. 5581

Filed: 22nd September 2004

Title: METHOD AND DEVICE FOR
DIGITALLY UPGRADING TEXTILE

Group Art Unit: 1751

Examiner: Nguyen, Khanh Tuan

Atty. Dkt. No.: **07054.0006.PCUS00**

RESPONSE TO INTERVIEW SUMMARY

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INTRODUCTORY COMMENTS

Sir:

The Applicants' attorney wishes to thank the examiner and his supervisor for making time available for an interview of the case on December 16th, 2008. In response to this interview, and the Interview Summary, please amend the above-identified application as below and consider the accompanying remarks:

AMENDMENTS TO THE CLAIMS

A complete listing of all claims in the application is provided below with the requested amendments marked.

1. (currently amended) Method for upgrading textile articles made from cloth, using an upgrading device, the device comprising a number of digitally controlled nozzles for applying jets of droplets of one or more substances to the textile articles, in addition to a conveyor for transporting the textile articles past the nozzles, wherein the nozzles are ordered in a number of successively placed rows extending transversely of the transporting direction of the textile article, the method comprising the steps of:

- a) affixing a first textile article to the conveyor to substantially prevent relative movement there-between;
- b) guiding the first textile article past a first row of nozzles;
- c) performing with the first row of nozzles one of the operations of painting, coating or finishing of the first textile article carried there-past;
- d) subsequently guiding the first textile article past a second row of nozzles;
- e) performing with the second row of nozzles another of the operations of painting, coating or finishing of the first textile article carried there-past; and

repeating steps a to e for a second textile article wherein the operation carried out in step c) or e) ~~does not comprise printing and~~ is different for the first and second articles.

2. (previously presented) Method as claimed in claim 1, comprising of painting the first or second textile article with a first row of nozzles, subsequently coating the painted textile article with a second row of nozzles and finally finishing the coated textile article with a third row of nozzles.

3. (previously presented) Method as claimed in claim 1, comprising of coating the first or second textile article with a first row of nozzles, subsequently finishing the coated textile article with a second row of nozzles.

4. (cancelled)

5. (previously presented) Method as claimed in claim 1, applied in a device of the continuous inkjet and multi-level deflection type, the method comprising the steps of:

- feeding substance to the nozzles in almost continuous flows;
- breaking up the continuous flows in the nozzles to form respective droplet jets;

- electrically charging or discharging the droplets;
- applying an electric field;
- deflecting the droplets with the electric field such that they are deposited at suitable positions on the first or second textile article.

6. (original) Method as claimed in claim 5, comprising of generating per nozzle at least 100,000 droplets per second.

7. (previously presented) Method as claimed in claim 1, comprising of applying substances from two or more successively placed rows of nozzles per treatment step of painting, coating or finishing.

8. (previously presented) Method as claimed in claim 7, comprising of arranging in any order, a cyan-coloured substance, a magenta-coloured substance, a yellow-coloured substance and a black substance in at least four successive rows of nozzles.

9. (original) Method as claimed in claim 7, comprising of arranging a substance of a mixed colour in at least four rows of nozzles.

10. (previously presented) Method as claimed in claim 1, wherein the treatment step of painting comprises of applying the substance substantially uniformly over the width of the textile article.

11. (previously presented) Method as claimed in claim 1, wherein the treatment of the first or second textile article comprises printing of the textile article in addition to painting, coating and/or finishing.

12. (original) Method as claimed in claim 11, wherein the treatment step of printing comprises of applying one or more patterns of the substance to the textile article.

13. (previously presented) Method as claimed in claim 1, wherein the treatment step of coating the first or second article comprises of applying a substance in a thin layer to the surface of the textile article.

14. (previously presented) Method as claimed in claim 1, wherein the treatment step of finishing the first or second textile article comprises of changing the physical properties of a substance previously applied to the textile article.

15. (previously presented) Method as claimed in claim 14, wherein the treatment step comprises of irradiating the textile article with infrared radiation.

16. (cancelled)

17. (cancelled)

18. (previously presented) Method as claimed in claim 1, comprising of directing the individual nozzles with a central control.

19. (previously presented) Method as claimed in claim 1, comprising of transporting the first or second textile article along nozzles placed on either side of the textile article for double-sided upgrading thereof.

20. (previously presented) Method as claimed in claim 1, comprising of painting the substance in one process run.

21. (previously presented) Method as claimed in claim 1, comprising applying coating and finishing substances in one process run.

22. (previously presented) Method as claimed in claim 1, comprising applying painting, coating and finishing substances in one process run.

23. (currently amended) Device for upgrading textile articles made from cloth, the device comprising;

a number of digitally controlled stationary nozzles for applying jets of droplets of one or more substances to the textile articles;

a conveyor for transporting the textile articles past the nozzles, wherein the nozzles are ordered in a number of successively placed rows extending transversely of the transporting direction of the textile articles;

an affixing system for affixing the textile article to the conveyor to substantially prevent relative movement there-between; and

a control unit for controlling operation of the device;

so that when in use the device can operate in a method comprising the steps of;

a) affixing a first textile article to the conveyor to substantially prevent relative movement there-between;

b) guiding the first textile article past a first row of nozzles;

c) performing with the first row of nozzles one of the operations of painting, coating or finishing of the first textile article carried there-past;

d) subsequently guiding the first textile article past a second row of nozzles;

e) performing with the second row of nozzles another of the operations of painting, coating or finishing of the first textile article carried there-past; and

repeating steps a to e for a second textile article wherein the operation carried out in step c) or e) ~~does not comprise printing and~~ is different for the first and second articles.

24. (cancelled)

25. (currently amended) Method for digitally upgrading a textile article made from cloth, using an upgrading device, the device comprising a continuous multi-level deflection type inkjet device having a number of nozzles for applying one or more substances to the textile article, in addition to a conveyor for transporting the textile article past the nozzles, wherein the nozzles are ordered in a number of successively placed rows extending transversely of the transporting direction of the textile article, the method comprising the steps of:

- guiding a textile article past a first row of nozzles;
- performing with the first row of nozzles one of the operations of painting, coating or finishing of the textile article carried there-along;
- subsequently guiding the textile past a second row of nozzles; and
- performing with the second row of nozzles another of the operations of painting, coating or finishing of the textile article carried there-past; wherein the operations of painting, coating or finishing do not comprise printing and do comprises the steps of:
 - feeding substance to the nozzles in almost continuous flows;
 - breaking up the continuous flows in the nozzles to form respective droplet jets;
 - electrically charging or discharging the droplets;
 - applying an electric field;
 - deflecting the droplets with the electric field such that they are deposited at suitable positions on the textile article.

26. (previously presented) Method as claimed in claim 1, wherein the second textile article is a downstream portion of the same article as the first article.

REMARKS

This paper is filed in response to the Interview Summary of 16th December 2008. Claims 1- 3, 5 - 15, 18- 23, 25 and 26 were pending in the application. Of these claims 1, 23 and 25 are amended. Therefore, claims 1- 3, 5- 15, 18- 23, 25 and 26 are resubmitted for consideration.

Rejection of Claims 1- 3, 5 - 15, 18 - 23, 25 and 26:

Claims 1-3, 5-15, 18-23 and 25-26 were rejected under 35 U.S.C. § 102 as being unpatentable over Dawson.

Furthermore, claims 1- 3, 5 - 15, 18- 23, 25 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dawson in view of Ishihara or Masuda.

In response to this rejection and based on the substance of the interview, claims 1, 23 and 25 have all been amended to exclude the case where the operations of painting, coating and finishing comprise printing. Basis for this exclusion is to be found in paragraphs [0004] to [0009], in particular [0006].

As discussed extensively during the interview, the embodiment of Figures 1 to 3 of Dawson relates specifically to the printing of designs onto carpet tiles. For this reason, a number of rows of nozzles are provided to provide the different colors needed to complete the design. The present disclaimer of printing is believed to distinguish explicitly over this embodiment of Dawson, which only performs printing and does not perform the steps of painting, coating or finishing as required by claim 1 and as defined at paragraphs [0007], [0008] and [0009] of the description.

Additionally, it is to be noted that the embodiment of Figures 1 to 3 of Dawson relates to the treatment of carpet tiles. Such tiles are two-dimensionally stable structures that are suitable for being placed onto a conveyor. The present claims are specifically directed to the upgrading of cloth. For this reason too, the claims are distinguished over Dawson.

Finally, it is again emphasized that the claim specifically requires “affixing a first textile article to the conveyor to substantially prevent relative movement there-between”. It has been discussed that in Dawson the placement of the tiles on the conveyor would serve to affix them. Nevertheless, it is respectfully pointed out that merely placing articles of cloth onto a conveyor would not affix them to substantially prevent relative movement. Vibration of the machine and

tensions in the warp of the cloth would cause it to move on and after placement, whereby accurate alignment between the deposition of the first and second rows of nozzles would be virtually impossible.

For all the above reasons, reconsideration of the rejection of claims 1, 23 and 25 under 35 U.S.C. § 102 is respectfully requested.

As has been discussed previously in the interview, the person of ordinary skill would not look to either of Ishihara or Masuda in order to adapt Dawson. These documents relate to cloth treatment and would be fundamentally incompatible with the carpet tiles treated by Dawson. In particular, it is doubted that such tiles would be able to follow the radius of the transport belts of Ishihara and Masuda.

It is also to be observed that when starting from Ishihara or Masuda, the person of ordinary skill would not consider the teachings of Dawson, as this does not achieve a fine image. According to the abstract of Ishihara, the purpose of the device is to obtain a high quality printed product. Using the patterning device of Dawson (having nozzles of 0.2 to 2 mm – see col. 3, line 4, 5) would not achieve the desired result and therefore any benefit due to the affixing of the substrate would be lost. Even if the teaching of Ishihara or Masuda were to be combined with Dawson, it still would not lead to the presently claimed subject matter since both documents appear to be concerned with printing.

For the above reasons, the matter as presently claimed in claims 1, 23 and 25 is considered to be non-obvious over the cited references. The Examiner is respectfully requested to reconsider the rejection and allow these claims.

Claims 2, 3, 5 to 15, 18 to 22 and 26 rely on the same inventive features as described in relation to claims 1, 23 and 25. For the same reasons, reconsideration and allowance of these claims is also respectfully requested.

Any extension of time that may be deemed necessary to further the prosecution of this application is hereby requested. The Commissioner is authorized to charge any fees which

may be required, or credit any overpayment, to **Deposit Account No. 08-3038**, referencing the docket number shown above.

The Examiner is respectfully requested to contact the undersigned by telephone at the number given below in order to resolve any questions.

Respectfully submitted,

/j.c. rasser/

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